



## **DEQ** Building a Pond in Michigan

**A** pond can be a valuable addition to your property, offering a watery oasis for wildlife, an interesting water garden, a swimming hole, or a source of water for livestock. To enjoy maximum benefits from your project, the pond must be properly designed and constructed. Maintenance requirements should be an important consideration in planning for a pond on your property. Complying with state and local regulations will help you avoid problems on your property and the property of your neighbors.

Landowners frequently contact staff of the Michigan Department of Environmental Quality (DEQ) with questions about constructing ponds. The following questions should be answered prior to building a pond in Michigan.

*How can I be sure my pond will fill with water?*

A pond can have a water supply from a number of sources. It can be from groundwater, surface water runoff, a stream, or a combination of these. Generally, ground-

water ponds are the most successful since their water supply is more predictable, they are less susceptible to surface water contamination, and less likely to impact adjacent properties.

A simple method to determine if an area may have a sufficient source of groundwater is to bore or dig a small diameter, six-foot deep hole and watch how the water level fluctuates over a one-year period. This can be accomplished with an auger or hand tool. If a backhoe is used, a DEQ permit is required. One can expect the water levels observed in the test hole to approximate the water levels of a future pond. The lowest level will likely occur in August. These levels should be considered when designing for an adequate water depth. Excavation costs rise significantly as the depth to groundwater increases.

Once an adequate water source is identified, the landowner should consider the proposed purpose of the pond. The size and shape of the pond will be determined by its purpose.



## *Characteristics of Ponds for Various Purposes*

Fishing & Swimming	A clean water supply; adequate size and depth, a minimum size of 1/2 to 1 acre is preferred with as much of the pond as possible having a water depth of 15 feet or more; side slopes of 1:3 (1 vertical foot to 3 horizontal feet) to discourage aquatic plant growth; side slopes in the swimming area of 1:4 for safe entry and exit; irregular shoreline for fishery habitat; protection from storm water runoff which can carry sediment and nutrients.
Wildlife	Variable depths with at least 50 percent shallow water (1-4 feet deep) to promote aquatic plant growth; flat side slopes 1:10 (1 vertical foot to 10 horizontal feet); irregular shoreline; and adjacent upland nesting habitat.
Stock Watering	Adequate size and depth to supply the quantity of water needed; safe entry/exit area for livestock; good water quality.

*Will I need a permit prior to building a pond?*

A permit from the DEQ is required (under Part 301 and Part 303 of the Natural Resources and Environmental Protection Act, 1994 PA 451) prior to construction of a pond if the pond will be:

- ① *Within 500 feet of a lake or stream, or connected to a lake or stream;*
- ② *Within a regulated wetland;*
- ③ *Within the 100-year floodplain of a river or stream;*
- ④ *Five surface acres or more in size; or*
- ⑤ *Created by construction of a dam across a river or stream. Dams with a height of six feet or more and which impound five acres or more, will require a plan prepared by a licensed engineer. Height and surface area are determined based on design flood conditions.*

To determine if the site is in a wetland or floodplain, contact the Land and Water Management Division in the DEQ office nearest you (see map on back of this brochure) or contact Land and Water Management Division at 517-241-8485 for information about the Wetland Assessment Program.

*How do I apply for a permit?*

You will need to fill out a permit application and provide a diagram and other information that describes your project and its location.

You may obtain an application form or other information by:

- ① Accessing the Land and Water Management Division home page on the Internet ([www.deq.state.mi.us/lwm/](http://www.deq.state.mi.us/lwm/)), and clicking on "Permit Consolidation";

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- ② Sending an e-mail note with your name and street address to Land and Water Management Division's Permit Consolidation Unit (DEQ-LWM-PCU@state.mi.us), requesting a permit application packet; or
  - ③ Calling the Permit Consolidation Unit in Lansing at 517-373-9244, or a field office of Land and Water Management Division (see listing and map on the back of this brochure).

*What factors are considered when DEQ is reviewing a permit application?*

The intent of the DEQ's review of pond construction projects is to reduce adverse environmental impacts. There are a number of simple construction considerations that will reduce or eliminate such impacts:

- ① Avoid placement of excavated material in adjacent wetlands.
- ② Do not place spoils in the floodway or floodplain of a stream, especially between the pond and stream.
- ③ In most cases, ponds should not have a direct surface water connection with a river or stream, particularly if this will have an adverse impact on a stream fishery such as with trout streams.
- ④ For safety, all ponds should have side slopes of 1:3 (1 vertical foot to 3 horizontal) or flatter.
- ⑤ To meet requirements of Natural River Plans, ponds should be located out of the natural vegetative strip.

- ⑥ Avoid impacting areas with known populations of threatened or endangered plants or animals.
- ⑦ Due to the detrimental effects of damming up existing streams to create ponds, this practice is strongly discouraged and may not be allowed under state regulations.

*Are there any publications that may help me decide what to do?*

An excellent publication concerning fishing ponds and general pond management is *Managing Michigan Ponds for Sport Fishing*. It is published by MSU Extension and is available by writing to MSU Extension, Michigan State University, East Lansing, Michigan 48824, or by calling the publications office at 517-355-0240. This publication is also available at the MSU Extension offices in each county.

If your interest is to attract wildlife such as waterfowl, specific design recommendations are listed in a publication entitled *Wetlands for Wildlife*, available from the Michigan Department of Natural Resources, Wildlife Division, P.O. Box 30444, Lansing, Michigan 48909, 517-373-1263.

*Careful planning, including consideration of the purpose of your pond, proper design and location, and obtaining necessary permits will help ensure that your pond gives you years of enjoyment.*

# Land and Water Management Division District and Field Offices



*Offices in italics are field offices within districts.*

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